Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers	)	CC Docket No. 01-338
	)	
	)	
Implementation of the Local Competition Provisions of the Telecommunications Act of 1996	)	CC Docket No. 96-98
	)	
	)	
Deployment of Wireline Services Offering Advanced Telecommunications Capability	)	CC Docket No. 98-147

REPORT AND ORDER AND ORDER ON REMAND AND FURTHER NOTICE OF PROPOSED RULEMAKING

Adopted: February 20, 2003 **Released:** August 21, 2003

Comment Date: 30 days after Federal Register publication of this Notice
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By the Commission: Chairman Powell and Commissioner Abernathy approving in part, dissenting in part and issuing separate statements; Commissioners Copps and Adelstein approving in part, concurring in part, dissenting in part and issuing separate statements; Commissioner Martin issuing a separate statement.

Para.

I. INTRODUCTION

1. Seven years ago, Congress enacted the Telecommunications Act of 1996 (1996 Act) for the benefit of the American consumer.[1] This watershed legislation was partially designed to remove the decades-old system of legal monopoly in the local exchange and open that market to competition. The 1996 Act did so by establishing broad interconnection, resale and network access requirements, designed to facilitate multiple modes of entry into the market by intermodal and intramodal service providers. The 1996 Act also sought to reduce the need for regulation in the presence of competition and provide for universal service mechanisms in order to foster the deployment of advanced telecommunications capabilities to all Americans.

2. This Commission and our colleagues in state commissions around the country have devoted enormous amounts of time and resources to implement the Act's market-opening requirements, and the industry has devoted equally large amounts of time and resources to take advantage of the new business opportunities made available by the 1996 Act. Few, if any, other requirements of the 1996 Act have attracted so much regulatory attention, industry effort, or litigation, however, as the requirement under section 251(c)(3) that incumbent local exchange carriers (incumbent LECs) make elements of their networks available on an unbundled basis to new entrants at cost-based rates. Every aspect and application of this extraordinary vehicle for

[1] Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56. The 1996 Act amended the Communications Act of 1934, 47 U.S.C. § 151 *et seq.* We refer to these Acts collectively as the "Communications Act" or the "Act."

opening local exchange markets has been the focus of extensive debate and litigation. Indeed, this Commission has been told twice, once by the Supreme Court and once by the D.C. Circuit, that it had failed to implement unbundling in a reasonable manner because it did not adopt appropriate principles for limiting its application.

3. Direction from the courts, our own experience, and the experience of the telecommunications industry over the last seven years have caused us to reevaluate the Commission's approach to these obligations in light of the Act's goals of opening local exchange markets to competition, fostering the deployment of advanced services, and reducing regulation. Although we recognize that Congress intended to create a competitive landscape through resale, interconnection and facilities-based provision, and a combination of these modes of entry, in practice, we have come to recognize more clearly the difficulties and limitations inherent in competition based on the shared use of infrastructure through network unbundling. While unbundling can serve to bring competition to markets faster than it might otherwise develop, we are very aware that excessive network unbundling requirements tend to undermine the incentives of both incumbent LECs and new entrants to invest in new facilities and deploy new technology. The effect of unbundling on investment incentives is particularly critical in the area of broadband deployment, since incumbent LECs are unlikely to make the enormous investment required if their competitors can share in the benefits of these facilities without participating in the risk inherent in such large scale capital investment. At the same time, continued unbundling for the network elements provided over current facilities appears to be necessary in many areas under section 251 of the Act, especially with respect to mass market customers.

4. This Order takes a balanced approach to these issues. We eliminate most unbundling requirements for broadband, making it easier for companies to invest in new equipment and deploy the high-speed services that consumers desire. We have also made new decisions concerning the unbundling of other network elements that result in substantial changes to existing requirements, including a more granular analysis of unbundling requirements by the states when appropriate.

5. This Order thus achieves three primary goals. First, this Order continues the Commission's implementation and enforcement of the Act's market-opening requirements by applying the experience we have gained implementing the Act. Second, it applies unbundling as Congress intended: with a recognition of the market barriers faced by new entrants as well as the societal costs of unbundling. In doing so, this Order resolves numerous questions about unbundling left open by years of litigation and industry conflicts, and opens a new chapter in the history of the Act's unbundling requirements. Third, this Order establishes a regulatory foundation that seeks to ensure that investment in telecommunications infrastructure will generate substantial, long-term benefits for all consumers.[2] The framework set forth in this Order recognizes that this competition is taking place on an intermodal basis – between wireline

[2] The 1996 Act was announced as "[a]n Act [t]o promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies." Preamble, Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996) (Preamble to the 1996 Act).

providers and providers of services on other platforms such as cable and wireless – and on an intramodal basis among wireline providers with different business and operational plans.

6. The path to the rules and policies we set forth in this Order has been neither straight nor easy. Legal challenges, a depressed telecommunications sector, and technical and operational obstacles have been features of the competitive landscape to a far greater extent than could have been reasonably predicted in 1996. On the other hand, the increasing presence of cable and wireless-based telephony services as well as the advent of broadband services and other new telecommunications and information services has already worked changes in the industry to a far greater extent than could have been reasonably predicted in 1996. In the past, we have stated that "the 1996 Act set the stage for a new competitive paradigm in which carriers in previously segregated markets are able to compete in a dynamic and integrated telecommunications market that promises lower prices and more innovative services to consumers."[3] We believe that the rules and policies we adopt today allow us to continue to strive for that goal and are carefully tailored to reflect today's environment, striking an appropriate balance between increasing infrastructure investment and innovation, and fostering sustainable competition from both intermodal and intramodal service providers in the local telecommunications markets. Accordingly, we believe that the certainty that we bring today will help stabilize the telecommunications industry, yield renewed investment in telecommunications networks, and increase sustainable competition in all telecommunications markets for the benefit of American consumers.

II. EXECUTIVE SUMMARY

7. The executive summary is as follows:

- **Principles of Unbundling.** The standards for unbundling are based on principles drawn from the Supreme Court and D.C. Circuit opinions concerning the impairment standard; guidance provided by the language, structure, purposes and history of the 1996 Act; and lessons from the economic and legal literature on topics potentially related to the ambiguous impair standard.

- **Network Element.** The Order reaffirms our previous interpretation of the statutory definition of the term "network element," set forth in section 153(29) of the Act, as requiring incumbent LECs to make available to requesting carriers network elements that are capable of being used in the provision of a telecommunications service. We specifically decline to limit the definition of a "network element" to facilities and equipment actually used in the provision of a telecommunications service.

[3] *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, Third Report and Order and Fourth Further Notice of Proposed Rulemaking, 15 FCC Rcd 3696, 3699, para. 2 (1999) (*UNE Remand Order*), *reversed and remanded in part sub. nom. United States Telecom Ass'n v. FCC*, 290 F.3d 415 (D.C. Cir. 2002) (*USTA*), *cert. denied sub nom. WorldCom, Inc. v. United States Telecom Ass'n*, 123 S.Ct 1571 (2003 Mem.) (*cert. denied* after adoption of this Order, but before release).

- **Impair Standard.** A requesting carrier is impaired when lack of access to an incumbent LEC network element poses a barrier or barriers to entry, including operational and economic barriers, that are likely to make entry into a market uneconomic. Thus, we interpret the "impair" standard as less demanding than the "necessary" standard. At the same time, we interpret the "impair" standard as requiring us to make specific, affirmative findings that elements should or should not be unbundled.

  - Types of Barriers to Entry. The Order describes the barriers that we consider relevant to the impairment analysis and examines whether unbundling can address the impairment caused by these barriers. In our application of the impairment standard to individual elements, we ask whether the sum of these barriers is likely to make entry uneconomic, taking into account any countervailing advantages that a requesting carrier may have. We specifically find that we should consider the following barriers to entry in determining whether impairment exists. We will examine the disparities caused by all the factors discussed here to determine whether, as a whole, they are likely to make entry into a market uneconomic.

    - Scale Economies. Scale economies, particularly when combined with sunk costs and first-mover advantages, can pose a powerful barrier to entry. The greater the extent and size of the scale economies throughout the range of potential demand, the higher the barrier they pose. Scale economies that pertain just to the beginning stages of entry, however, might not be an appropriate factor in an unbundling analysis.

    - Sunk Costs. Sunk costs, particularly when combined with scale economies, can pose a formidable barrier to entry. Sunk costs increase a new entrant's cost of failure. Potential new entrants may also fear that an incumbent LEC that has incurred substantial sunk costs will drop prices to protect its investment in the face of new entry. In addition, sunk costs can give significant first-mover advantages to the incumbent LEC, which has incurred these costs over many years and has already had the opportunity to recoup many of these costs through its rates.

    - First-Mover Advantages. First-mover advantages often create an absolute cost disadvantage for new entrants, which if large enough, can be a barrier to entry. First-mover advantages can also contribute to the effects of economies of scale and high sunk costs.

    - Absolute Cost Advantages. Absolute cost advantages, if of sufficient size, can deter entry or make it impossible for entrants to provide service in an economic fashion.

    - Barriers Within the Control of the Incumbent LEC. We also consider barriers to entry that are solely or primarily within the control of the incumbent LEC since eliminating them or mitigating their effects is within the control of the incumbent LEC.

- Evidence of Impairment. Actual marketplace evidence is the most persuasive and useful evidence. In particular, we are interested in evidence concerning whether new entrants are providing retail services in the relevant market using non-incumbent LEC facilities. We also give weight to the deployment of intermodal technologies. In addition, we will give consideration to cost studies and modeling. We reaffirm our prior conclusion in the *UNE Remand Order* to afford little weight in determining whether impairment exists to evidence that requesting carriers are using incumbent LEC tariffed services to provide competing retail services.

- Granularity of Impairment Analysis. We perform a granular analysis of impairment by taking into account considerations related to customer classes, geography, and services. In discussing specific network elements, we also consider the types and capacity of the facilities involved.

- Implicit Support Flows. We explain how our impairment standard addresses the existence of implicit support flows in a manner that is responsive to the concerns raised by the D.C. Circuit's *USTA* decision. At the same time, we conclude that the statute is best interpreted as giving the Commission broad discretion concerning consideration of implicit support flows in the impairment analysis.

- **The "Necessary" Standard.** We retain the interpretation of the "necessary" standard set forth in the *UNE Remand Order*.

- **"At a Minimum."** Although we have not required the unbundling of any network elements in this Order in the absence of impairment, we find that this provision permits us to consider, when appropriate, "other" factors closely tied to the purposes of the statute in reaching an unbundling determination. In this Order, however, we use this authority sparingly to inform our consideration of unbundling when some level of impairment may exist, but unbundling appears likely to undermine important goals of the 1996 Act such as the deployment of advanced telecommunications capabilities.

- **Role of the States.** The record before us and the D.C. Circuit's emphasis in *USTA* on granularity in making unbundling determinations both lead us to conclude that asking the states to take on some fact finding responsibilities would be the most reasonable way to implement the statutory goals for certain network elements. We find that giving the state this role is most appropriate where, in our judgment, the record before us does not contain sufficiently granular information and the states are better positioned than we are to gather and assess the necessary information.

Unbundling Requirements for Individual Network Elements

- **Mass Market Loops.** Incumbent LECs must offer unbundled access to stand-alone copper loops and subloops for the provision of narrowband and broadband services. Subject to a grandfather provision and a transition period, incumbent LECs do not have to provide unbundled access to the high frequency portion of their loops. Incumbent LECs must offer unbundled access to the Time Division Multiplexing (TDM) features, functions, and capabilities of their hybrid copper/fiber loops. Similarly, only in fiber

loop overbuild situations where the incumbent LEC elects to retire existing copper loops must the incumbent LEC offer unbundled access to those fiber loops for narrowband service only. Incumbent LECs do not have to offer unbundled access to newly deployed or "greenfield" fiber loops or to the packet-switching features, functions, and capabilities of their hybrid loops.

- **Enterprise Market Loops.** Incumbent LECs are no longer required to unbundle OCn loops. Incumbent LECs must offer unbundled access to dark fiber loops, DS3 loops (limited to 2 loops per requesting carrier per customer location) and DS1 loops except at specified customer locations where states have found no impairment pursuant to Commission-delegated authority to conduct a more granular review based on Commission-defined triggers measuring the availability or feasibility of alternatives to incumbent LEC unbundled loops at such customer location.

- **Subloops.** Incumbent LECs must offer unbundled access to subloops necessary to access wiring at or near a multiunit customer premises, including the Inside Wire Subloop, *i.e.*, all incumbent LEC loop plant between the minimum point of entry (MPOE) at a multiunit premises and the point of demarcation, regardless of the capacity level or type of loop the requesting carrier will provision to its customer. Unbundled access must be provided at any technically feasible accessible terminal at or near the multiunit premises, including but not limited to, a pole or pedestal, a network interface device (NID), the MPOE, the single point of interconnection (SPOI) or a feeder distribution interface. A requesting carrier accessing a subloop on the incumbent LEC's network side of the NID obtains the NID functionality as part of that subloop. Upon notification by a requesting carrier that interconnection is required through SPOI, an incumbent LEC is required to provide a SPOI at multiunit premises where the incumbent LEC owns, controls or leases the wiring at such premises.

- **Network Interface Devices (NID).** Incumbent LECs must offer unbundled access to the NID on a stand alone basis to requesting carriers. The NID is defined as any means of interconnecting the incumbent LEC's loop distribution plant to wiring at a customer premises location. An incumbent LEC shall permit a requesting carrier to connect its loop facilities through the incumbent LEC's NID.

- **Dedicated Transport.** We redefine the dedicated transport network element as those transmission facilities that connect incumbent LEC switches or wire centers. The Commission conducted its impairment analysis of dedicated transport by capacity level. Specifically, we find that requesting carriers are not impaired without access to unbundled OCn level transport. Further, we find that requesting carriers are impaired without access to dark fiber, DS3, and DS1 transport, each independently subject to a granular route-specific review by the states to identify available wholesale facilities. Dark fiber and DS3 transport also each subject to a granular route-specific review by the states to identify where transport facilities can be deployed.

- **Switching for Enterprise Market (defined as DS1 and above).** We find, on a national basis, that competitive LECs are not impaired without unbundled local circuit switching

when serving the enterprise market. We recognize that a more geographically specific record may reveal such impairment in particular markets and thus allow states to rebut this national finding based on certain operational and economic criteria.

- **Switching for Mass Market (defined as DS0).** We find, on a national basis, that competing carriers are impaired without unbundled local circuit switching when serving the mass market due to operational and economic barriers associated with the incumbent LEC hot cut process. We require state commissions to approve an incumbent LEC batch hot cut process, or make a detailed finding that such a process is not necessary. We recognize that a more geographically specific record may identify particular markets where there is no impairment and thus ask states to apply Commission-defined triggers measuring existing switch deployment serving this market and, if necessary, consider operational and economic barriers to switch deployment to serve this market. If states conclude that there is impairment in a particular market, they must consider whether the impairment can be cured by requiring unbundled switching on a rolling basis, rather than making unbundled switching available for an indefinite period of time.

- **Shared Transport.** We find that carriers are impaired without shared transport only to the extent that carriers are impaired without access to unbundled switching.

- **Packet Switching.** Incumbent LECs are not required to unbundle packet switching, including routers and Digital Subscriber Line Access Multiplexers (DSLAMs), as a stand-alone network element. The Order eliminates the current limited requirement for unbundling of packet switching.

- **Signaling Networks.** Incumbent LECs are only required to offer unbundled access to their signaling network when a carrier is purchasing unbundled switching. The signaling network element, when available, includes, but is not limited to, signaling links and signaling transfer points (STPs).

- **Call-Related Databases.** When a requesting carrier purchases unbundled access to the incumbent LEC's switching, the incumbent LEC must also offer unbundled access to their call-related databases and, if the incumbent LEC does not provide customized routing, to operator service and directory assistance (OS/DA) services. When a carrier utilizes its own switches, with the exception of 911 and E911 databases, incumbent LECs are not required to offer unbundled access to call-related databases, including, but not limited to, the Line Information database (LIDB), Toll Free Calling database, Number Portability database, Calling Name (CNAM) database, Operator Services/Directory Assistance databases, and the Advanced Intelligent Network (AIN) database.

- **OSS Functions.** Incumbent LECs must offer unbundled access to their operations support systems (OSS) for qualifying services. OSS consists of pre-ordering, ordering, provisioning, maintenance and repair, and billing functions supported by an incumbent LEC's databases and information. The OSS element also includes access to all loop

qualification information contained in any of the incumbent LEC's databases or other records.

Unbundling Requirements for Individual Network Elements

- **Combinations of Network Elements.** Competitive LECs may order new combinations of unbundled network elements (UNEs), including the loop-transport combination (enhanced extended link, or EEL), to the extent that the requested network elements are unbundled. A competitive LEC may convert special access services to a UNE or UNE combination. All requests for newly-provisioned EELs and for conversions of special access circuits to EELs are subject to the service eligibility criteria. Competitive LECs are permitted to commingle UNEs and UNE combinations with other wholesale services, such as tariffed interstate special access services. Incumbent LECs are not required to provide "ratcheting," which is a pricing mechanism that involves billing a single circuit at multiple rates and would result in providing discounted UNEs.

- **Service Eligibility.** We conclude that where a requesting carrier satisfies the following three categories of criteria, it is a bona fide provider of qualifying services and thus is entitled to order high-capacity EELs. First, we find that each requesting carrier must have a state certification of authority to provide local voice service. Second, to demonstrate that it actually provides a local voice service to the customer over every DS1 circuit, we find that the requesting carrier must have at least one local number assigned to each circuit and must provide 911 or E911 capability to each circuit. Third, we find that requesting carriers must certify to meeting the following additional circuit-specific architectural safeguards to qualify for the high-capacity circuit:

    - each circuit must terminate into a collocation governed by section 251(c)(6) at an incumbent LEC central office within the same LATA as the customer premises;

    - each circuit must be served by an interconnection trunk in the same LATA as the customer premises served by the EEL for the meaningful exchange of local traffic;

    - for every 24 DS1 EELs or the equivalent, the requesting carrier must maintain at least one active DS1 local service interconnection trunk; and

    - each circuit must be served by a Class 5 switch or other switch capable of providing local voice traffic.

- **Certification and Auditing.** A requesting carrier must certify in writing that it satisfies the qualifying service eligibility criteria for each high-capacity EEL circuit. As part of their limited right to audit compliance with these criteria, incumbent LECs may obtain and pay for an independent auditor to audit, on an annual basis, compliance with them.

- **Modification of Existing Network.** Incumbent LECs are required to make routine network modifications to UNEs used by requesting carriers where the requested facility has already been constructed. These routine modifications include deploying multiplexers to existing loop facilities and undertaking the other activities that incumbent LECs make for their own retail customers. We also require incumbent LECs to condition loops for the provision of digital subscriber line (xDSL) services. We do not require incumbent LECs to trench new cable or otherwise to construct transmission facilities so that requesting carriers can access them as UNEs at cost-based rates, but we clarify that the incumbent LEC's unbundling obligation includes all transmission facilities deployed in its network.

Remaining Issues

- **Section 271 Issues.** The requirements of section 271(c)(2)(B) establish an independent obligation for BOCs to provide access to loops, switching, transport, and signaling, under checklist items 4-6 and 10, regardless of any unbundling analysis under section 251. Where a checklist item is no longer subject to section 251 unbundling, section 252(d)(1) does not operate as the pricing standard. Rather, the pricing of such items is governed by the "just and reasonable" standard established under sections 201 and 202.

- **Clarification of TELRIC Rules.** The order clarifies two key components of its TELRIC pricing rules to ensure that UNE prices send appropriate economic signals to incumbent LECs and competitive LECs. First, the order clarifies that the risk-adjusted cost of capital used in calculating UNE prices should reflect the risks associated with a competitive market. The order also reiterates the Commission's finding from the *Local Competition Order* that the cost of capital may be different for different UNEs. Second, the Order declines to mandate the use of any particular set of asset lives for depreciation, but clarifies that the use of an accelerated depreciation mechanism may present a more accurate method of calculating economic depreciation. In addition to these clarifications, the Order notes that the Commission plans to open a proceeding to consider issues related to its TELRIC pricing rules.

- **Fresh Look.** The Commission will retain the determination made in the *UNE Remand Order* that it will not permit competitive LECs to avoid any liability under contractual early termination clauses in the event that it converts a special access circuit to a UNE. Although "fresh look" has occurred in the past, this rare exercise of Commission discretion is not appropriate here because it would be unfair to both incumbent LECs and other competitors, disruptive to the market place, and ultimately inconsistent with the public interest.

- **Transition Period.** The Commission will not intervene in the contract modification process to establish a specific transition period for each of the rules established in this Order. Instead, as contemplated in the Act, individual carriers will have the opportunity to negotiate specific terms and conditions necessary to translate our rules into the commercial environment, and to resolve disputes over any new contract language arising from differing interpretations of our rules. Except where noted, the Commission

will not establish specific transition periods for each of the rules established in this Order but will, instead, rely on the timing of the contract modification process. As contemplated in the Act, individual carriers will have the opportunity to negotiate specific terms and conditions necessary to translate the rules into the commercial environment, and to resolve disputes over any new contract language arising from differing interpretations of our rules.

- **Periodic Review of National Unbundling Rules.** The Commission will evaluate these rules consistent with the biennial review mechanism established in section 11 of the Act. These reviews, however, will not be performed *de novo* but according to the standards of the biennial review process.

- **Duty To Negotiate in Good Faith.** We amend our duty-to-negotiate rule, section 51.301(c)(8)(ii), to make the rule conform to the text of the *Local Competition Order*.

- **Further Notice of Proposed Rulemaking.** We open a further notice of proposed rulemaking to seek comment on whether we should modify the Commission's interpretation of section 252(i). The Commission's so-called pick-and-choose rule permits requesting carriers to opt into individual portions of interconnection agreements without accepting all the terms and conditions of such agreements. We tentatively conclude that a modified approach would better serve the goals embodied in section 252(i), and sections 251-252 generally, by promoting more meaningful commercial negotiations between incumbent LECs and competitive LECs. Specifically, we tentatively conclude that if an incumbent LEC obtains state approval of a statement of generally available terms and conditions (SGAT) pursuant to section 252(f), the incumbent LEC and competitive LECs could negotiate customized agreements that third parties could opt into entirely or not at all. Finally, unless and until an SGAT is approved in a particular state, the existing pick-and-choose rule would remain in effect in that state.

III. BACKGROUND AND LEGAL HISTORY

8. This Order represents, in large part, a fresh examination of the issues presented in implementing the unbundling requirements of section 251 of the Act. Our consideration of these issues, however, takes place within the context of prior Commission orders and judicial decisions examining those orders. An understanding of the Commission's prior efforts to address these issues as well as the relevant court guidance is critical to ensuring a successful consideration of these issues in this Order.

9. *Statutory Requirements.* The Communications Act requires that incumbent LECs provide UNEs to other telecommunications carriers.[4] In particular, section 251(c)(3) of the Act states that incumbent LECs have a duty to

[4] Section 153(44) of the Act defines a telecommunications carrier as "any provider of telecommunications services, except that such term does not include aggregators of telecommunications services (as defined in section (continued....)

> provide, to any requesting telecommunications carrier for the provision of a telecommunications service, nondiscriminatory access to network elements on an unbundled basis at any technically feasible point on rates, terms, and conditions that are just, reasonable, and nondiscriminatory in accordance with the terms and conditions of the agreement and the requirements of this section and section 252.[5]

This section requires that incumbent LECs provide such network elements "in a manner that allows requesting carriers to combine such elements in order to provide such telecommunications service."[6] The Act defines the term "network element" as "a facility or equipment used in the provision of a telecommunications service," specifying that "[s]uch term also includes features, functions, and capabilities that are provided by means of such facility or equipment, including subscriber numbers, databases, signaling systems, and information sufficient for billing and collection or used in the transmission, routing, or other provisions of a telecommunications service."[7]

10. The Act also establishes a general federal standard for use in determining the UNEs that must be made available by the incumbent LECs pursuant to section 251. Section 251(d)(2) provides that

> [i]n determining what network elements should be made available for purposes of subsection (c)(3), the Commission shall consider, at a minimum, whether – (A) access to such network elements as are proprietary in nature is necessary; and (B) the failure to provide access to such network elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer.[8]

The 1996 Act also preserves a state role in addressing unbundling issues. First, section 252 authorizes states to review and to arbitrate interconnection agreements for compliance with the requirements of sections 251 and 252 and this

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226)." 47 U.S.C. § 153(44). Section 153(44) also states that "[a] telecommunications carrier shall be treated as a common carrier under this Act only to the extent that it is engaged in providing telecommunications services, except that the Commission shall determine whether the provision of fixed and mobile satellite service shall be treated as common carriage." *Id.*

5 47 U.S.C. § 251(c)(3).

6 *Id.* Section 153(46) defines telecommunications service as "the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available to the public, regardless of the facilities used." *Id.* § 153(46).

7 *Id.* § 153(29).

8 *Id.* § 251(d)(2).

Commission's implementing rules.[9] Second, section 251(d)(3) also preserves states' independent state law authority to address unbundling issues to the extent that the exercise of that authority poses no conflict with federal law. That section provides that

> [i]n prescribing and enforcing regulations to implement the requirements of this section, the Commission shall not preclude the enforcement of any regulation, order, or policy of a State commission that – (A) establishes access and interconnection obligations of local exchange carriers; (B) is consistent with the requirements of this section; and (C) does not substantially prevent implementation of the requirements of this section and the purposes of this part.[10]

11. In addition, the statute establishes standards to govern the pricing of UNEs in sections 251 and 252. For UNEs, section 251(c)(3) provides that elements shall be made available "on rates, terms, and conditions that are just, reasonable, and nondiscriminatory."[11] Section 252 provides that:

> [d]eterminations by a State Commission of the . . . just and reasonable rate for network elements for purposes of subsection [251](c)(3) . . . – (A) shall be – (i) based on the cost (determined without reference to a rate-of-return or other rate-based proceeding) of providing the . . . network element . . . , and (ii) nondiscriminatory, and (B) may include a reasonable profit.[12]

The statute also establishes a resale entry vehicle separate from the availability of UNEs. Section 251(c)(4) provides that incumbent LECs have "[t]he duty . . . to offer for resale at wholesale rates any telecommunications service that the carrier provides at retail to subscribers who are not telecommunications carriers."[13] Because section 251(c)(4) applies only to retail telecommunications services that the incumbent LEC provides to subscribers, some incumbent LEC services, such as wholesale-only services and information services, are not available at a resale discount to competing carriers. Indeed, as the Commission has discussed in section 271

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9 *See generally id.* § 252.

10 *Id.* § 251(d)(3). The states may exercise this state law authority in the course of reviewing interconnection agreements under section 252. *See id.* § 252(e)(3).

11 *Id.* § 251(c)(3).

12 *Id.* § 252(d)(1).

13 *Id.* § 251(c)(4).

orders, some incumbent LECs' retail "high-speed Internet access service[s]" have not been affirmatively determined to fall within section 251(c)(4).[14]

12. *Local Competition Order.* The Commission first addressed the unbundling obligations of incumbent LECs in the *Local Competition Order*, which, among other things, adopted rules designed to implement the requirements of the section 251.[15] The Commission interpreted the statutory "necessary" and "impair" standards governing the incumbent LECs' unbundling obligations very broadly. The Commission stated that for purposes of determining whether access to a proprietary network element was "necessary" under section 251(d)(2), the term "[n]ecessary means . . . that an element is a prerequisite for competition."[16] The Commission also found that "[t]he term 'impair' means 'to make or cause to become worse; diminish in value.'"[17] The Commission added that the "impairment" standard requires "the Commission . . . to consider whether the failure of an incumbent to provide access to a network element would decrease the quality, or increase the financial or administrative cost of the service a requesting carrier seeks to offer, compared with providing that service over other unbundled elements in the incumbent LEC's network."[18]

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[14] *Joint Application by SBC Communications Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance Pursuant to Section 271 of the Telecommunications Act of 1996 To Provide In-Region, InterLATA Services in Arkansas and Missouri*, CC Docket No. 01-194, Memorandum Opinion and Order, 16 FCC Rcd 20719, 20758-61, paras. 79-84 (2001); *see also Application by BellSouth Corp., BellSouth Telecommunications, Inc., and BellSouth Long Distance, Inc., for Authorization To Provide In-Region, InterLATA Services in Florida and Tennessee*, WC Docket No. 02-307, Memorandum Opinion and Order, 17 FCC Rcd 25828, 25922, para. 178 (2002) (*BellSouth FL/TN 271 Order*); *Application by SBC Communications Inc., Pacific Bell Telephone Company, and Southwestern Bell Communications Services Inc., for Authorization To Provide In-Region, InterLATA Services in California*, WC Docket No. 02-306, Memorandum Opinion and Order, 17 FCC Rcd 25650, 25714, para. 113 (2002); *Joint Application by BellSouth Corp., BellSouth Telecommunications, Inc. and BellSouth Long Distance, Inc. for Provision of In-Region, InterLATA Services in Georgia and Louisiana*, CC Docket No. 02-35, Memorandum Opinion and Order, 17 FCC Rcd 9018, 9174-76, paras. 274-77 (2002) (*BellSouth Georgia/Louisiana Order*).

[15] *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996; Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers*, CC Docket Nos. 96-98, 95-185, First Report and Order, 11 FCC Rcd 15499, 15616-775 (1996) (*Local Competition Order*), *aff'd in part and vacated in part sub nom. Competitive Telecommunications Ass'n v. FCC*, 117 F.3d 1068 (8th Cir. 1997) and *Iowa Utils. Bd. v. FCC*, 120 F.3d 753 (8th Cir. 1997), *aff'd in part and remanded, AT&T v. Iowa Utils. Bd.*, 525 U.S. 366 (1999) (*Iowa Utils. Bd.*), *on remand, Iowa Utils. Bd. v. FCC*, 219 F.3d 744 (8th Cir. 2000), *reversed in part sub nom. Verizon Communications Inc. v. FCC*, 535 U.S. 467 (2002) (*Verizon*), Order on Reconsideration, 11 FCC Rcd 13042 (1996), Second Order on Reconsideration, 11 FCC Rcd 19738 (1996), Third Order on Reconsideration and Further Notice of Proposed Rulemaking, 12 FCC Rcd 12460 (1997), further recons. pending.

[16] *Local Competition Order*, 11 FCC Rcd at 15641, para. 282.

[17] *Id.* at 15643, para. 285.

[18] *Id.*

13. The Commission also adopted a minimum set of UNEs, requiring that incumbent LECs provide unbundled access to local loops,[19] network interface devices,[20] local and tandem switching capability,[21] interoffice transmission facilities,[22] signaling and call-related databases,[23] operations support systems functions,[24] and operator services and directory assistance facilities.[25] The Commission noted that the state commissions were free to prescribe additional elements.[26] The Commission also found that the incumbent LECs were obligated to combine UNEs upon request.[27]

14. In addition, the Commission established the Total Element Long Run Incremental Cost (TELRIC) methodology, a forward-looking, long-run, incremental cost methodology, for the states to use in setting actual rates for UNEs.[28] The Commission found that "the price of a network element should include the forward-looking costs that can be attributed directly to the provision of services using that element, which includes a reasonable return on investment (*i.e.*, "profit"), plus a reasonable share of the forward-looking joint and common costs."[29] The

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[19] In the *Local Competition Order*, the Commission defined the local loop network element "as a transmission facility between a distribution frame, or its equivalent, in an incumbent LEC central office, and the network interface device at the customer premises." *Id.* at 15691, para. 380.

[20] The Commission defined the network interface device network element as a "cross-connect device used to connect loop facilities to inside wiring." *Id.* at 15697, para. 392 n.852.

[21] The Commission defined the local switching network element to include "line-side and trunk-side facilities plus the features, functions and capabilities of the switch." *Id.* at 15706, para. 412.

[22] The Commission stated that the interoffice transmission facilities network element included "unbundled access to shared transmission facilities between end offices and the tandem switch" as well as "unbundled access to dedicated transmission facilities between LEC central offices or between such offices and those of competing carriers." *Id.* at 15718, para. 440.

[23] The Commission stated that "purchase of unbundled elements of the SS7 [signaling] network gives the competitive provider the right to use those elements for signaling between its switches (including unbundled switching elements), between its switches and the incumbent LEC's switches, and between its switches and those third party networks with which the incumbent LEC's SS7 network is interconnected." *Id.* at 15740, para. 483. The Commission required that incumbent LECs make access to their call-related databases available on an unbundled basis for the purpose of switch query and database response through the SS7 network. The Commission stated that "[c]all-related databases are those SS7 databases used for billing and collection or used in the transmission, routing or other provision of a telecommunications service." *Id.* at 15741, para. 484 n.1126.

[24] The Commission required that the incumbent LECs make unbundled access to their operations support systems available for pre-ordering, ordering, provisioning, maintenance and repair, and billing. *Id.* at 15766-67, para. 523.

[25] *Id.* at 15771, para. 534.

[26] *Id.* at 15625-26, para. 244.

[27] *Id.*

[28] *Id.* at 15812-72, paras. 618-740.

[29] *Id.* at 15844-56, paras. 673-703.

Commission determined that TELRIC-based rates for UNEs should not include embedded or historical costs, opportunity costs or universal service subsidies.[30]

15. *Iowa Utilities Board v. FCC.* On review in 1997, the Eighth Circuit vacated many of the rules adopted in the *Local Competition Order* as beyond the Commission's jurisdiction, which it viewed as limited to interstate matters.[31] The court also vacated section 51.315(b) of the Commission's rules, which barred incumbent LECs from separating UNEs before providing them to competitors, on the ground that "unbundled" means "not combined."[32] In addition, the court vacated sections 51.315(c)-(f), which required incumbent LECs to combine elements on behalf of competitive LECs on request, on the ground that section 251(c)(3) does not require incumbent LECs to combine elements on behalf of competitive LECs, but only requires incumbent LECs to provide elements in a manner that permits the competitive LEC to do the actual combining.[33] As to "superior network" issues, the court held that section 251(c)(3) requires "unbundled access only to an incumbent LEC's existing network – not to a yet unbuilt superior one."[34] Specifically, the Eighth Circuit explained that incumbent LECs can be required to modify their facilities "to the extent necessary to accommodate interconnection or access to network elements," but cannot be required "to *alter substantially* their networks in order to provide *superior* quality interconnection and unbundled access."[35] Finally, the court upheld the Commission's interpretation of the "necessary" and "impair" standards.[36]

16. *AT&T v. Iowa Utilities Board.* In 1998, the U.S. Supreme Court reversed the Eighth Circuit's jurisdictional holdings, concluding that the Commission has jurisdiction to implement the local competition provisions of the 1996 Act. The Court, however, vacated the Commission's interpretation of the "necessary" and "impair" standards in section 251(d)(2).[37] In particular, the Court also faulted the Commission for its failure to consider the availability of alternative sources of network elements.[38] The Court also concluded that "the Commission's assumption that *any* increase in cost (or decrease in quality) imposed by denial of a network element renders access to that element 'necessary,' and causes the failure to provide that element to 'impair' the entrant's ability to furnish its desired services is simply not in accord with the

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30 *Id.* at 15844, para. 673; 15857-69, paras. 704-32.

31 *Iowa Utils. Bd. v. FCC*, 120 F.3d 753.

32 *Id.* at 813.

33 *Id.*

34 *Id.*

35 *Id.* at 813 n.33 (emphasis added).

36 *Id.* at 810-12.

37 *Iowa Utils. Bd.*, 525 U.S. 366.

38 *Id.*

ordinary and fair meaning of those terms."[39] The Court stated "that the Act requires the FCC to apply *some* limiting standard, rationally related to the goals of the Act, which it has simply failed to do."[40]

17. In conclusion, the Court stated that "if Congress had wanted to give blanket access to incumbents' networks on a basis as unrestricted as the scheme the Commission has come up with, it would not have included § 251(d)(2) in the statute at all."[41] Instead, "[i]t would simply have said . . . that whatever requested element can be provided must be provided."[42] At the same time, the Court declined to find that section 251(d)(2) incorporates "something akin to the 'essential facilities' doctrine" as argued by the incumbent LECs.[43] The Court found that it need not decide whether the statute requires application of that standard as a matter of law, adding "it may be that some other standard would provide an equivalent or better criterion for the limitation upon network-element availability that the statute has in mind."[44]

18. The Court upheld section 51.315(b) of the Commission's rules, which bars an incumbent LEC from separating network elements that are already combined in the incumbent's network before providing them to a competitor if the competitor asks for them in a combined form. The Commission had explained that the rule prevents incumbent LECs from disconnecting previously connected elements merely to impose additional reconnect charges on requesting carriers. The Court stated that section 251(c)(3) is "ambiguous on whether leased network elements may or must be separated, and the rule the Commission has prescribed is entirely rational, finding its basis in § 251(c)(3)'s nondiscrimination requirement."[45]

19. *The Commission's UNE Remand Order.* In 1999, in response to the Supreme Court's decision, the Commission re-examined its treatment of the "necessary" and "impair" standards, as well as the list of UNEs that incumbent LECs must provide.[46] In the *UNE Remand Order*, the Commission adopted narrower requirements for determining the UNEs that incumbent LECs must provide pursuant to the "necessary" and "impair" standards, and modified its list of required UNEs, expanding it in certain respects and narrowing it in others.

20. The Commission found that a proprietary network element is "necessary" under section 251(d)(2)(A) "if, taking into consideration the availability of alternative elements outside

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39 *Id.* at 389-90.

40 *Id.* at 388.

41 *Id.* at 390.

42 *Id.*

43 *Id.* at 388.

44 *Id.*

45 *Id.* at 395.

46 *UNE Remand Order*, 15 FCC Rcd 3696.

the incumbent's network, including self-provisioning by a requesting carrier or acquiring an alternative from a third party supplier, lack of access to that element would, as a practical, economic, and operational matter, *preclude* a requesting carrier from providing the services it seeks to offer."[47]

21. The Commission also adopted a new definition of what constitutes "impairment" for purposes of section 251(d)(2)(B). The Commission stated that

> [t]he incumbent LECs' failure to provide access to a non-proprietary network element 'impairs' a requesting carrier . . . if, taking into consideration the availability of alternative elements outside the incumbent's network, including self-provisioning by a requesting carrier or acquiring an alternative from a third-party supplier, lack of access to that element *materially diminishes* a requesting carrier's ability to provide the services it seeks to offer.[48]

The Commission added that "[i]n order to evaluate whether there are alternatives actually available to the requesting carrier as a practical, economic and operational matter, we look at the totality of the circumstances associated with using an alternative."[49] The Commission thus held that the "'impair' analysis considers the cost, timeliness, quality, ubiquity, and operational issues associated with the use of an alternative."[50]

22. The Commission also stated that it was "interpret[ing] the obligations imposed in section 251(d)(2) within the larger statutory framework of the 1996 Act," consistent with that section's directive to consider "at a minimum" the "necessary" and "impair" standards.[51] Accordingly, the Commission stated that "in addition to the factors set forth above, we may consider the following factors:"[52] (1) the rapid introduction of competition in all markets -- "whether the availability of an unbundled network element is likely to encourage requesting carriers to enter the local market in order to serve the greatest number of consumers as rapidly as possible[;]"[53] (2) promotion of facilities-based competition, investment and innovation – "the extent to which the unbundling obligations we adopt will encourage the development of facilities-based competition by competitive LECs, and innovation and investment by both

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47 *Id.* at 3704 (emphasis in original); *see also id.* at 3720-23, paras. 41-47.

48 *Id.* at 3704-05 (emphasis in original); *see also id.* at 3723-50, paras. 48-116.

49 *Id.* at 3705; *see also id.* at 3730, para. 62.

50 *Id.* at 3705; *see also id.* at 3730-45, paras. 62-100.

51 *Id.* at 3705; *see also id.* at 3745-46, paras. 101-02.

52 *Id.* at 3705; *see also id.* at 3746-47, paras. 103-06.

53 *Id.* at 3705; *see also id.* at 3747-48, paras. 107-09.

incumbent LECs and competitive LECs, especially for the provision of advanced services[;]"[54] (3) reduced regulation – "the extent to which we can encourage investment and innovation by reducing regulatory obligations to provide access to network elements, as alternatives to the incumbent LECs' network elements become available in the future[;]"[55] (4) certainty in the market – "how the unbundling obligations . . . can provide the uniformity and predictability that new entrants and fledgling competitors need to develop national and regional business plans[, as well as] . . . whether the rules . . . provide financial markets with reasonable certainty so that carriers can attract the capital they need to execute their business plans to serve the greatest number of consumers[;]"[56] and (5) administrative practicality – "whether the unbundling obligations . . . are administratively practical to apply."[57]

23. Based on this analysis, the Commission concluded that the following network elements must be unbundled: (1) loops – "including high-capacity lines, xDSL-capable loops, dark fiber, and inside wire owned by the incumbent LEC[;]"[58] (2) subloops – "unbundled access to subloops, or portions of the loop, at any accessible point[;]"[59] (3) NID – "includ[ing] all features, functions and capabilities of the facilities used to connect the loop to premises wiring, regardless of the specific mechanical design[;]"[60] (4) circuit switching – "except for local circuit switching used to serve end users with four or more lines in access density zone 1 in the top 50 Metropolitan Statistical Areas (MSAs), provided that the incumbent LEC provides non-discriminatory, cost-based access to the enhanced extended link throughout zone 1[;]"[61] (5) packet switching – "only in limited circumstances in which the incumbent has placed digital loop carrier systems in the feeder section of the loop or has its Digital Subscriber Line Access Multiplexer (DSLAM) in a remote terminal[;]"[62] (6) interoffice transmission facilities – "unbundled access to dedicated interoffice transmission facilities, or transport, including dark fiber[;]"[63] (7) shared transport – unbundled access to shared transport where unbundled local

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[54] *Id.* at 3705; *see also id.* at 3748-49, paras. 110-12.

[55] *Id.* at 3705; *see also id.* at 3749, para. 113.

[56] *Id.* at 3705; *see also id.* at 3749-50, paras. 114-15.

[57] *Id.* at 3705; *see also id.* at 3750, para. 116.

[58] *Id.* at 3706; *see also id.* at 3778-87, paras. 181-201.

[59] *Id.* at 3706; *see also id.* at 3788-800, paras. 202-29.

[60] *Id.* at 3706; *see also id.* at 3800-04, paras. 230-40.

[61] *Id.* at 3707; *see also id.* at 3804-32, paras. 241-99. An enhanced extended link is "a combination of an unbundled loop, multiplexing/concentrating equipment, and dedicated transport." *Id.* at 3707.

[62] *Id.* at 3707; *see also id.* at 3832-40, paras. 300-17.

[63] *Id.* at 3707; *see also id.* at 3840-61, paras. 318-68. The Commission defined dedicated interoffice transmission facilities as "incumbent LEC transmission facilities dedicated to a particular customer or carrier that provide telecommunications between wire centers owned by the incumbent LECs or requesting telecommunications carriers, or between switches owned by incumbent LECs or requesting telecommunications carriers." *Id.* at 3707.

circuit switching is provided;[64] (8) signaling and call-related databases – including, but not limited to "unbundled access to signaling links and signaling transfer points (STPs) in conjunction with unbundled switching, and on a stand-alone basis[,]" as well as unbundled access to call-related databases;[65] and (9) OSS – "consist[ing] of pre-ordering, ordering, provisioning, maintenance and repair, billing functions supported by an incumbent LEC's databases and information[,]" including "access to all loop qualification information contained in any of the incumbent LEC's databases or other records, including information on whether a particular loop is capable of providing advanced services."[66] The Commission stated that in light of the rapid changes in technology and competition, it would reexamine the national list of UNEs in three years, thereby establishing the Triennial Review process reflected in this Order.

24. *Availability of Enhanced Extended Links.* The Commission subsequently modified its *UNE Remand Order* as it related to the use of UNEs to provide exchange access services originating and terminating long distance services.[67] Specifically, the Commission ruled that on an interim basis, pending further Commission action, "interexchange carriers (IXCs) may not convert special access services to combinations of unbundled loops and transport network elements, whether or not the IXCs self-provide entrance facilities (or obtain them from third parties)."[68] The Commission provided that this restriction would not apply "if an IXC uses combinations of unbundled network elements to provide a significant amount of local exchange service, in addition to exchange access service, to a particular customer."[69] The Commission stated that this temporary restriction on the use of EELs was consistent with its finding in the *Local Competition Order* that the Commission "may, where necessary, establish a temporary transitional mechanism to help complete all of the steps toward the pro-competitive goals of the 1996 Act, including the full implementation of a competitively-neutral system to fund universal service and a completed transition to cost-based access charges."[70]

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[64] *Id.* at 3707. The Commission defined shared transport as "transmission facilities shared by more than one carrier, including the incumbent LEC, between end office switches, between end office switches and tandem switches, and between tandem switches in the incumbent LEC's network." *Id.*

[65] *Id.* at 3707-08. The Commission stated that the call-related databases that must be unbundled "include[d], but [were] not limited to, the Line Information database (LIDB), Toll Free Calling database, Number Portability database, Calling Name (CNAM) database, Operator Services/Directory Assistance databases, Advanced Intelligent Network (AIN) databases, and the AIN platform and architecture." *Id.*

[66] *Id.* at 3708. The Commission specifically found that certain other network elements did not need to be unbundled. The elements that need not be unbundled included: (1) operator services and directory assistance (OS/DA) – except in limited circumstances; (2) shared transport – where the incumbent LEC is not required to offer unbundled local circuit switching; and (3) packet switching – except in limited circumstances. *Id.*

[67] *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, Supplemental Order, 15 FCC Rcd 1760 (1999) (*Supplemental Order*).

[68] *Id.* at 1760, para. 2.

[69] *Id.*

[70] *Id.* at 1763, para. 7.

25. The Commission later clarified and extended this temporary restriction on the use of EELs to provide exchange access service.[71] In particular, the Commission "define[d] more precisely the 'significant amount of local exchange service' that a requesting carrier must provide in order to obtain loop-transport combinations."[72] The Commission specified three different sets of circumstances that would serve as safe harbors for demonstrating that a requesting carrier was providing a significant amount of local exchange service to a particular customer. The Commission stated that "section 251(d)(2) does not compel [the Commission], once [it] determines[s] that any network element meets the 'impair' standard for one market, to grant competitors automatic access to that same network element solely or primarily for use in a different market."[73] The Commission also clarified that "incumbent LECs must allow requesting carriers to self-certify that they are providing a significant amount of local exchange service over combinations of unbundled network elements."[74] In addition, the Commission noted that there was widespread agreement among all interested parties concerning appropriate auditing procedures.[75]

26. *Line Sharing Order.* In the *Line Sharing Order*, the Commission directed incumbent LECs to provide the high-frequency portion of the local loop (HFPL) to requesting telecommunications carriers as a UNE.[76] In reaching this conclusion, the Commission found that "[a]n incumbent LEC's failure to provide such access impairs the ability of a competitive LEC to offer certain forms of xDSL-based services."[77] The Commission stated "[t]he record shows that lack of access would materially raise the cost for competitive LECS to provide advanced services to residential and small business users, delay broad facilities-based market entry and materially limit the scope and quality of competitor service offerings."[78] In order to prevent the degradation of analog voice service, the Commission required that incumbent LECs make the high frequency

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[71] *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, Supplemental Order Clarification, 15 FCC Rcd 9587 (2000), *aff'd sub nom. CompTel v. FCC*, 309 F.3d 3 (D.C. Cir. 2002) (*CompTel*) (*Supplemental Order Clarification*).

[72] *Id.* at 9598, para. 21.

[73] *Id.* at 9595, para. 15.

[74] *Id.* at 9602, para. 29.

[75] *Id.* at 9603-04, para. 31. The Commission also adopted a restriction on the commingling of local exchange and access traffic as an additional means of preventing widespread conversion of special access circuits to UNEs. *Id.* at 9602, para. 28.

[76] *Deployment of Wireline Services Offering Advanced Telecommunications Capability and Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket Nos. 98-147, 96-98, Third Report and Order in CC Docket No. 98-147 and Fourth Report and Order in CC Docket No. 96-98, 14 FCC Rcd 20912 (1999) (*Line Sharing Order*).

[77] *Id.* at 20916. Digital subscriber line technology, commonly referred to as xDSL, permits high speed connections between subscribers and packet switched networks over ordinary copper telephone loops. *Id.* at 20915, para. 3.

[78] *Id.* at 20916, para. 5.

portion of the loop available only to carriers seeking to provide xDSL-based service that meets certain criteria. The Commission also concluded that "[i]ncumbents are not required to provide unbundled access to the high frequency portion of the loop if they are not currently providing analog voice service to the customer." The Commission also required that incumbent LECs "condition loops to enable requesting carriers to provide acceptable forms of xDSL-based services over the high frequency portion of the loop unless such conditioning would significantly degrade the incumbent's analog voice service."[79]

27. *Iowa Utilities Board v. FCC (Remand Decision).* In 2000, on remand after the Supreme Court's opinion in *AT&T v. Iowa Utilities Board*, the Eighth Circuit reviewed several more aspects of the *Local Competition Order*.[80] The court vacated on the merits the Commission's rule setting out the TELRIC pricing methodology because the methodology calls for incumbent LECs to be compensated for the use of their network at charges that reflect what an incumbent's costs would be if it were providing the most efficient technology in the most efficient configuration available using its existing wire center locations. The court reasoned that costs based on this "hypothetical" network did not reflect the "cost . . . of providing the interconnection or network element" as required by section 252(d)(1)(A)(i).[81] The court did, however, agree with the Commission that it was reasonable to interpret "cost" to mean forward-looking cost, rather than historical cost,[82] and that the cost of the element should not include any costs of universal service subsidies.[83] The court also reaffirmed its earlier decision to vacate the Commission's new combinations rules, sections 51.315(c)-(f).[84]

28. *Triennial Review NPRM.* In December 2001, about two years after releasing the *UNE Remand Order*, the Commission adopted and released the *Notice* that began the instant proceeding, the *Triennial Review NPRM*.[85] The *Notice* posed questions regarding almost all aspects of the unbundling regime, including the "necessary" and "impair" standards, the "at a minimum" language of section 251(d)(2), whether and how the Commission's previously identified UNEs should be unbundled, and whether the Commission should conduct a more

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[79] *Id.* at 20917.

[80] *Iowa Utils. Bd. v. FCC*, 219 F.3d 744.

[81] *Id.* at 750.

[82] *Id.* at 751.

[83] *Id.* at 753. The court also vacated the Commission's resale pricing rule on the ground that section 252(d)(3) requires wholesale rates to reflect those retail costs that the incumbent LEC actually avoids by providing the service at wholesale rather than at retail, not those costs that merely could be avoided. *Id.* at 755.

[84] *Id.* at 759.

[85] *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Docket Nos. 01-338, 96-98, 98-147, Notice of Proposed Rulemaking, 16 FCC Rcd 22781 (2001) (*Triennial Review NPRM*).

granular impairment analysis.[86] The Commission asked particular questions about crafting unbundling rules that foster facilities investment by both incumbent LECs and new entrants, in particular investment in facilities needed to provide broadband services.[87]

29. *Verizon v. FCC.* In 2002, after the Commission released the *Triennial Review NPRM*, the Supreme Court upheld the TELRIC standard established by the Commission in the *Local Competition Order* and applied by state commissions to set the actual rates for UNEs.[88] In so doing, the Court overturned the decision by the Eighth Circuit concerning the lawfulness of the TELRIC pricing standard. The Court specifically rejected the argument that rates for UNEs must be based on the historic cost incurred by the incumbent LEC in furnishing the specific UNE to be provided as opposed to its value or price in a competitive open market. The Court also affirmed the Commission's decision to base TELRIC costs on the use of the most efficient telecommunications technology currently available and the lowest cost network configuration in light of the existing location of the incumbent's wire centers. In addition, the Court rejected the claim that TELRIC is an unreasonable rate making methodology for UNEs because it does not produce facilities-based competition. The Court stated that it "had no idea whether a different forward-looking pricing scheme would have generated even greater competitive investment than the $55 billion that the entrants claim."[89] The Court, however, emphasized that "it suffices to say that a regulatory scheme that can boast such substantial competitive capital spending over a 4-year period is not easily described as an unreasonable way to promote competitive investment in facilities."[90]

30. Moreover, the Court eliminated remaining uncertainty regarding the Commission's new combinations requirement by explicitly upholding the Commission's rules requiring that incumbent LECs combine UNEs in certain circumstances even if they are not combined in the incumbent's network. The Court stated these rules "reflect a reasonable reading of the statute, meant to remove practical barriers to competitive entry into local-exchange markets while avoiding serious interference with incumbent network operations."[91]

31. *United States Telecom Association v. FCC.* Eleven days after the Supreme Court's decision in *Verizon,* the D.C. Circuit vacated and remanded for further consideration the portions of the Commission's *UNE Remand Order* that adopted an interpretation of the "impair" standard and established a list of mandatory UNEs, and vacated and remanded as well the Commission's order requiring that the high-frequency portion of the loop be made available as a

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[86] *Id.* at 22790, para. 18, 22791, para. 21, 22803-13, paras. 47-70, 22797-802, para. 34-44.

[87] *Id.* at 22793-96, paras. 24-30.

[88] *Verizon*, 535 U.S. 467.

[89] *Verizon*, 535 U.S. at 517.

[90] *Id.*

[91] *Id.* at 535.

UNE.[92] Specifically, it appears that the court reversed rule 51.317(b) (the "impair" standard) and rule 51.319 (specific unbundling requirements).[93] As explained below, other rules related to these topics, such as the rules relating to spectrum management and the rule defining the "necessary" standard, remain in effect.[94]

32. While recognizing "the extraordinary complexity of the Commission's task[,]"[95] the court found the Commission's analysis wanting in a number of respects. At the outset, the court criticized what it characterized as the decision in the *UNE Remand Order* "to adopt a uniform national rule, mandating [an] element's unbundling in every geographic market and customer class, without regard to the state of competitive impairment in any particular market."[96] The court concluded that, under this approach, "UNEs will be available to CLECs in many markets where there is no reasonable basis for thinking that competition is suffering from any impairment of a sort that might have [been] the object of Congress's concern."[97] The court stated that "[o]ne reason for such market-specific variations in competitive impairment is the cross-subsidization often ordered by state regulatory commissions, . . [which] usually brings about undercharges for some subscribers (usually rural and/or residential) and overcharges for the others (usually urban and/or business)."[98] In particular, the court stated that "[t]he Commission never explicitly addresses by what criteria want of unbundling can be said to impair competition in such markets [where customers are charged below cost] where, given the ILEC's regulatory hobbling, any competition will be wholly artificial."[99] The court added, "[b]ut it is in the other segments of the markets, where presumably ILECs must charge above cost (at least above average costs allocated in conventional regulatory fashion) in order to offset their losses in the subsidized markets, that the gap in the Commission's reasoning is greatest."[100] In particular, the court stated that "the Commission nowhere appears to have considered the advantage CLECs enjoy in being free of any duty to provide underpriced service to rural and/or residential

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92 *USTA*, 290 F.3d 415.

93 On September 4, 2002, the court stayed the effectiveness of its opinion until January 2, 2003. *See USTA v. FCC*, No. 00-1012, Order (D.C. Cir. Sept. 4, 2002). Then, on December 23, 2002, the court granted the consent motion of the Commission and the Bell Operating Companies to extend the stay through February 20, 2003. *See USTA v. FCC*, Nos. 00-1012, 00-1015, Order (D.C. Cir. Dec. 23, 2002).

94 *See infra* Parts V.C., the Necessary Standard, and VI.A.4.a.(v), *Specific Unbundling Requirements for Mass Market Loops*.

95 *USTA*, 290 F.3d at 421.

96 *Id.* at 422.

97 *Id.*

98 *Id.*

99 *Id.*

100 *Id.*

customers and thus of any need to make up the difference elsewhere."[101] The court also concluded that the Commission had failed to adequately explain how a uniform national rule would help to achieve the goals of the Act, including the rapid introduction of competition, promotion of facilities-based competition, investment and innovation, certainty in the market place, administrative practicality and reduced regulation.[102]

33. The court further found that the *UNE Remand Order* improperly "reflect[s] an open-ended notion of what kinds of cost disparity are relevant" for purposes of identifying impairment.[103] In particular, the court stated that "[t]o rely on cost disparities that are universal as between new entrants and incumbents in *any* industry is to invoke a concept too broad, even in support of an *initial* mandate, to be reasonably linked to the purpose of the Act's unbundling provisions."[104] Instead, the court indicated that the Commission must engage in a balancing process, reflecting both the benefits and drawbacks of unbundling, noting that, in his separate opinion in *AT&T v. Iowa Utilities Board*, "Justice Breyer concluded that fulfillment of the Act's purposes . . . called for 'balance' between . . . competing concerns."[105] The court of appeals stated that although it did not "intend to suggest that the Act requires use of [the essential facilities] doctrine's criteria[,]"[106] "[a] cost disparity approach that links 'impairment' to universal characteristics, rather than ones linked in (in some degree) to natural monopoly, can hardly be said to strike such a balance."[107] The court emphasized that "cost comparisons of the sort made by the Commission, largely devoid of any interest in whether the cost characteristics of an 'element' render it at all unsuitable for competitive supply, seem unlikely either to achieve the balance called for explicitly by Justice Breyer or implicitly by the Court as a whole."[108] The court also vacated the Commission's *Line Sharing Order*, finding that the Commission had failed to give adequate consideration to existing facilities-based competition in the provision of broadband services, especially by cable systems.[109]

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[101] *Id.* at 423.

[102] *Id.*

[103] *Id.* at 426.

[104] *Id.* at 427 (emphasis in original).

[105] *Id.* In this regard, the court stated that "[e]ach unbundling of an element imposes costs of its own, spreading the disincentive to invest in innovation and creating complex issues of managing shared resources[,]" while recognizing that "a broad mandate [for unbundling] can facilitate competition by eliminating the need for separate construction of facilities where such construction would be wasteful." *Id.*

[106] *Id.*

[107] *Id.*

[108] *Id.*

[109] *Id.* at 428-29.

34. *Competitive Telecommunications Association v. FCC.* In 2002, a few months after the D.C. Circuit's decision in *USTA*, the D.C. Circuit upheld the Commission's interim restrictions on the availability of enhanced extended links for use in the provision of exchange access service.[110] The court held that the Commission has authority to restrict the availability of UNEs to particular services for which there has been a showing that denial of the requested element would impair the competitor's ability to provide the service.[111] The court also found that the Commission had provided a reasonable justification for its restrictions on the use of enhanced extended links for the provision of exchange access service. Moreover, the court went on to state that "it is far from obvious to us that the FCC has the power, without an impairment finding as to non-local services, to require that ILECs provide EELs for such services on an unbundled basis[,]" although it did not rule on this issue since it was not raised by the parties.[112] The court also rejected CompTel's argument that the Commission's safe harbor provisions were arbitrary and capricious.[113]

IV. EVOLUTION OF THE MARKET FOR LOCAL TELECOMMUNICATIONS SERVICES

35. To provide context for this Order's unbundling decisions, we describe some of the major developments in the local telecommunications market, with special emphasis on the introduction of competition through the 1996 Act. This Part provides a brief factual overview of telecommunications markets that sets the stage for the unbundling decisions set forth below.

A. Effects of the Act on Telecommunications and Industry Trends

36. The 1996 Act marked the greatest single change in local telephone regulation since the original Communications Act of 1934. Although a few states had initiated significant market opening programs, the 1996 Act opened the monopoly local exchange market on a nationwide basis and also established procedures for the Bell Operating Companies (BOCs) to enter the interLATA long distance market.[114] Specifically, the 1996 Act expanded existing collocation and interconnection requirements[115] and imposed network access requirements to

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[110] *CompTel*, 309 F.3d at 8.

[111] *See id.* at 12-14.

[112] *Id.* at 14.

[113] *See id.* at 17-18.

[114] *Local Competition Order*, 11 FCC Rcd at 14174, para. 4; 47 U.S.C. § 271. Nineteen states had some local competition rules in place by the time of the 1996 Act. Seven of these states had firms offering competitive switched access service: California, Illinois, Maryland, Massachusetts, Michigan, New York, and Washington.

[115] *See, e.g., Expanded Interconnection with Local Telephone Company Facilities*, CC Docket No. 91-141, First Report and Order, 7 FCC Rcd 7369 (1992) (*Special Access Order*), *vacated in part and remanded, Bell Atlantic*, 24 F.3d 1441 (D.C. Cir. 1994); *First Reconsideration*, 8 FCC Rcd 127 (1993), *vacated in part and remanded, Bell Atlantic Tel. Cos. v. FCC*, 24 F.3d 1441 (D.C. Cir. 1994); *Second Reconsideration*, 8 FCC Rcd 7341 (1993); *Second Report and Order*, 8 FCC Rcd 7374 (1993) (*Switched Transport Order*), *vacated in part and remanded, Bell* (continued....)